

IN THE CLAIMS

The following is a claim listing showing the claim status:

1. (Original) A catalyst comprising:
a porous substrate having an average pore size of from 1 μm to 1000 μm ; and
disposed over the porous substrate, a zirconia-supported, alkali-metal-modified,
ruthenium catalyst.
2. (Original) The catalyst of claim 1 made by steps comprising: impregnating zirconia
with solution containing Ru and K, calcining, and reducing.
3. (Original) The catalyst of claim 1 comprising 0.1 to 10wt% Ru and 0.1 to 10wt% K.
4. (Original) The catalyst of claim 1 comprising a large pore support wherein at least
20% of the catalyst's pore volume is composed of pores in the diameter size range of 0.1 to 300
microns.
5. (Previously Presented) The catalyst of claim 4 characterizable by a test in which the
catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8%
CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 50 ms and a temperature of 325 °C,
resulting in greater than 70% CO conversion and at least 80% CO₂ selectivity.
6. (Previously Presented) The catalyst of claim 1 characterizable by a test in which the
catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8%
CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 25 ms and a temperature of 420 °C,
resulting in greater than 70% CO conversion and at least 80% CO₂ selectivity.
- 7-21. (Canceled)

22. (Previously Presented) The catalyst of claim 1 wherein the porous substrate comprises FeCrAlY.
23. (Previously Presented) The catalyst of claim 1 comprising 0.2 to 3 wt% Ru and 0.1 to 10wt% K.
24. (Previously Presented) The catalyst of claim 23 comprising 0.5 to 3 wt% K.
25. (Previously Presented) The catalyst of claim 23 comprising ZrO₂ with a BET surface area greater than 10 m²/g.
26. (Previously Presented) The catalyst of claim 1 having a pore volume of 30 to 95%.
27. (Previously Presented) The catalyst of claim 23 wherein at least 20% of the materials pore volume is composed of pores in the size range of 0.1 to 300 microns.
28. (Previously Presented) The catalyst of claim 1 wherein at least 20% of the materials pore volume is composed of pores in the size range of 1 to 100 microns.
29. (Previously Presented) The catalyst of claim 3 wherein at least 50% of the materials pore volume is composed of pores in the size range of 0.3 to 200 microns.

30. (Previously Presented) The catalyst of claim 1 characterizable by a test in which the catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8% CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 50 ms and a temperature of 325 °C, resulting 70 to 85% CO conversion and 80-95% CO₂ selectivity.
31. (Previously Presented) The catalyst of claim 3 characterizable by a test in which the catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8% CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 25 ms and a temperature of 420 °C, resulting in 70 to 85% CO conversion and at least 80% CO₂ selectivity.
32. (Previously Presented) The catalyst of claim 1 wherein the porous substrate comprises a felt.
33. (Previously Presented) The catalyst of claim 27 characterizable by a test in which the catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8% CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 50 ms and a temperature of 325 °C, resulting 70 to 85% CO conversion and 80-95% CO₂ selectivity.
34. (Previously Presented) The catalyst of claim 29 characterizable by a test in which the catalyst is placed in a reaction chamber and contacted with a reactant gas mixture containing 8% CO, 7% CO₂, 38% H₂, and 47% H₂O, at a contact time of 25 ms and a temperature of 420 °C, resulting in 70 to 85% CO conversion and at least 85% CO₂ selectivity.